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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Masakazu Kawai

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EXAMINER

MARC, MCDIEUNEL

ART UNIT

PAPER NUMBER

3664

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,278	Applicant(s) KAWAI, MASAKAZU	
	Examiner MCDIEUNEL MARC	Art Unit 3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-5 are pending.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

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with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-5 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 7,119,510. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the above patent are broader than the claims of this application.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Takenaka et al. (U.S. Pat. No. 6243623).

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As per claim 1, **Takenaka et al.**, teaches a robot that includes a method of successively estimating the position of a floor reaction force acting point of each leg of a biped walking mobile body (see figs. 1 and 4), comprising: a first step for successively grasping the position of the center of gravity of the biped walking mobile body (see fig. 1), the position of the ankle joint of each leg (see figs. 40-43), and the position of the (metatarsophalangeal joint)¹ of the foot of the leg, respectively, and also successively grasping the vertical distance from the ankle joint to a ground contact surface of each leg in contact with the ground while the biped walking mobile body (see figs. 1 and 30) is in motion (see fig. 43, wherein first foot, second foot, first ankle and second ankle have been taken as foot articulation/metatarsophalangeal), a first ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor) and a second ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor) being provided on the sole of the foot of each leg of the biped walking mobile body (see fig. 1), and the first and the second ground contact sensors (see fig. 30, particularly inclination sensor, yaw-rate sensor) outputting ground contact detection signals based on whether a place directly below an ankle joint of a leg and a place directly below a metatarsophalangeal joint of the foot of the leg (see fig. 2), respectively, are in contact with the ground (see fig. 2); and a second step wherein, for each leg in contact with the ground while the biped walking mobile body (see fig. 1) is in motion (see fig. 2, wherein the bending angle being considered as a result of motion), the horizontal position of

¹ The **metatarsophalangeal articulations** are the joints between the metatarsal bones of the foot and the proximal bones (proximal phalanges) of the toes . They are condyloid joints meaning and elliptical or rounded surface (of the metatarsal bones) come close to the shallow cavities (of the proximal phalanges). The ligaments are the plantar and two collateral. The movements permitted in the metatarsophalangeal articulations are flexion, extension, abduction, and adduction

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one of the center of gravity, the ankle joint of the leg, and the metatarsophalangeal joint of the leg (see fig. 2 as a whole), the positions thereof having been determined in the first step, is successively estimated selectively as the horizontal position of the floor reaction force acting point of the leg on the basis of at least the combination of contact or no contact with the ground indicated by a ground contact detection signal of the first ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor and fig. 2) and contact or no contact with the ground indicated by a ground contact detection signal of the second ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor) of each leg (see figs. 1 and 4-5), and the vertical position of the floor reaction force acting point of the leg is successively estimated as the position apart vertically downward from the ankle joint by the vertical distance from the ankle joint to the ground contact surface of the leg determined in the first step (see fig. 2).

As per claims 2-5, **Takenaka et al.**, teaches a robot wherein when estimating the horizontal position of the floor reaction force acting point in the second step, on each leg in contact with the ground (see fig. 2), if a ground contact detection signal of the first ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor) of each leg is a signal indicating contact with the ground and a ground contact detection signal of the second ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor) of the leg is a signal indicating no contact with the ground, then the horizontal position of the ankle joint of the leg is estimated as the horizontal position of a floor reaction force acting point of the leg (see fig. 4), or if a ground contact detection signal of the first ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor) of each leg is a signal indicating no contact with the ground and a ground contact detection signal of the second ground contact sensor (see fig.

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30, particularly inclination sensor, yaw-rate sensor) of the leg is a signal indicating contact with the ground (see fig. 2), or if ground contact detection signals of both the first ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor) and the second ground contact sensor (see fig. 30, particularly inclination sensor, yaw-rate sensor) of each leg are signals indicating contact with the ground and if the position of the center of gravity is behind the position of the ankle joint of the leg in the advancing direction of the biped walking mobile body (see fig. 1), then the horizontal position of the ankle joint of the leg is estimated as the horizontal position of the floor reaction force acting point of the leg (see fig. 4); and teaches a robot wherein the vertical distance from the ankle joint to a ground contact surface of each leg when the biped walking mobile body (see fig. 1) is in an upright stationary state is measured and retained in a memory beforehand (see fig. 3), and when grasping the vertical distance from the ankle joint to the ground contact surface of each leg in contact with the ground in the first step (see fig. 30), the vertical distance retained in the memory is grasped as the vertical distance from the ankle joint to the ground contact surface of each leg in contact with the ground (see fig. 2); if the position of the center of gravity is before the position of the metatarsophalangeal joint of the leg in the advancing direction of the biped walking mobile body (see fig. 2, wherein the dot has been considered as center for gravity); a step for successively grasping the inclination angle of each rigid corresponding part of a biped walking mobile body (see fig. 1) that corresponds to each rigid body of a rigid link model representing the biped walking mobile body (see fig. 1) in the form of a link assembly of a plurality of rigid bodies (see fig. 1), the acceleration of the center of gravity of the rigid corresponding part and the angular acceleration of the rigid corresponding part, weight and size of each rigid corresponding part that have been determined

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in advance (see fig. 18, wherein weight and size fall under design choice), the position of the center of gravity of each rigid corresponding part in the rigid corresponding part that has been determined in advance, and the inertial moment of each rigid corresponding part that has been determined in advance (see col. 17).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MCDIEUNEL MARC whose telephone number is (571)272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on (571) 272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/McDieunel Marc/

Examiner, Art Unit 3664

March 22, 2009

/K. T./

Supervisory Patent Examiner, Art Unit 3664